

LISTING OF THE CLAIMS:

This listing of claims is provided for the Examiner's convenience only; no claim amendments have been made in the instant Response:

Claim 1 (Original): A rigid polyurethane foam prepared by mixing:

an isocyanate;

a polyol blend comprising

about 20% to about 100%, based on the total polyol blend, of an aromatic amine-initiated polyether polyol,

up to about 60%, based on the total polyol blend, of an aromatic polyester polyol, and

up to about 20%, based on the total polyol blend, of a sucrose-based polyether polyol,

wherein the sum of the percentages of the polyols totals 100%; and

about 10 to about 15%, based on the total foam formulation, of 1,1,1,3,3-pentafluoropropane (HFC-245fa),

optionally, one or more components chosen from catalysts, chain extenders, crosslinking agents, surfactants, foam stabilizers, cell regulators, fillers, dyes, pigments, flame retardants, hydrolysis protection agents, fungicides and bactericides,

wherein the rigid polyurethane foam has a k-factor at 35°F of from about 0.115 to about 0.120 BTU-in./hr.ft² °F.

Claim 2 (Original): The rigid polyurethane foam according to Claim 1, wherein the polyol blend comprises about 55% of the aromatic amine-initiated polyether polyol, about 25% of the aromatic polyester polyol and about 20% of the sucrose-based polyether polyol.

Claim 3 (Original): The rigid polyurethane foam according to Claim 1, wherein the isocyanate is chosen from m-phenylene diisocyanate, p-phenylene diisocyanate, 2,4-toluene diisocyanate, 2,6-toluene diisocyanate, 1,6-hexamethylene diisocyanate, 1,4-hexamethylene diisocyanate, 1,4-cyclohexane diisocyanate, hexahydrotoluene

diisocyanate and isomers thereof, 1,5-naphthylene diisocyanate, 1-methyl-phenyl-2,4-phenyl diisocyanate, 4,4'-diphenylmethane diisocyanate, 2,4'-diphenyl-methane diisocyanate, 4,4'-biphenylene diisocyanate, 3,3'-dimethoxy-4,4'-biphenylene diisocyanate, 3,3'-dimethyl-diphenyl-propane-4,4'-diisocyanate, 2,4,6-toluene triisocyanate, 4,4'-dimethyl-diphenyl-methane-2,2', 5,5'-tetraisocyanate and polymethylene polyphenylpolyisocyanates.

Claim 4 (Original): The rigid polyurethane foam according to Claim 1, wherein the isocyanate is a modified polymeric methylenediphenyl diisocyanate (pMDI).

Claim 5 (Original): The rigid polyurethane foam according to Claim 1, wherein the foam formulation further includes from about 0.1% to about 1.5%, based on the total foam formulation of water.

Claim 6 (Original): The rigid polyurethane foam according to Claim 1, wherein the aromatic amine-initiated polyol is based on ortho-toluene diamine (o-TDA).

Claim 7 (Original): The rigid polyurethane foam according to Claim 1, wherein the foam formulation comprises about 12.5%, based on the total foam formulation, of the 1,1,1,3,3-pentafluoropropane (HFC-245fa).

Claim 8 (Original): In a process of making an appliance insulation material, the improvement comprising including the rigid polyurethane foam according to Claim 1.

Claim 9 (Previously presented): A rigid polyurethane foam prepared by mixing:

- an isocyanate;
- a polyol blend comprising
 - about 20% to about 90%, based on the total polyol blend, of an aromatic amine-initiated polyether polyol,
 - about 5% to about 60%, based on the total polyol blend, of an aromatic polyester polyol, and

about 5% to about 20%, based on the total polyol blend, of a sucrose-based polyether polyol,
wherein the sum of the percentages of the polyols totals 100%; and
about 10 to about 15%, based on the total foam formulation, of 1,1,1,3,3-pentafluoropropane (HFC-245fa),
optionally, one or more components chosen from catalysts, chain extenders, crosslinking agents, surfactants, foam stabilizers, cell regulators, fillers, dyes, pigments, flame retardants, hydrolysis protection agents, fungicides and bactericides,
wherein the rigid polyurethane foam has a k-factor at 35°F of from about 0.115 to about 0.120 BTU-in./hr.ft² °F.

Claim 10 (Original): The rigid polyurethane foam according to Claim 9, wherein the polyol blend comprises about 55% of the aromatic amine-initiated polyether polyol, about 25% of the aromatic polyester polyol and about 20% of the sucrose-based polyether polyol.

Claim 11 (Original): The rigid polyurethane foam according to Claim 9, wherein the isocyanate is chosen from m-phenylene diisocyanate, p-phenylene diisocyanate, 2,4-toluene diisocyanate, 2,6-toluene diisocyanate, 1,6-hexamethylene diisocyanate, 1,4-hexamethylene diisocyanate, 1,4-cyclohexane diisocyanate, hexahydrotoluene diisocyanate and isomers thereof, 1,5-naphthylene diisocyanate, 1-methyl-phenyl-2,4-phenyl diisocyanate, 4,4'-diphenylmethane diisocyanate, 2,4'-diphenyl-methane diisocyanate, 4,4'-biphenylene diisocyanate, 3,3'-dimethoxy-4,4'-biphenylene diisocyanate, 3,3'-dimethyl-diphenyl-propane-4,4'-diisocyanate, 2,4,6-toluene triisocyanate, 4,4'-dimethyl-diphenyl-methane-2,2', 5,5'-tetraisocyanate and polymethylene polyphenylpolyisocyanates.

Claim 12 (Original): The rigid polyurethane foam according to Claim 9, wherein the isocyanate is a modified polymeric methylenediphenyl diisocyanate (pMDI).

Claim 13 (Original): The rigid polyurethane foam according to Claim 9, wherein the foam formulation further includes from about 0.1% to about 1.5%, based on the total foam formulation of water.

Claim 14 (Original): The rigid polyurethane foam according to Claim 9, wherein the aromatic amine-initiated polyol is based on ortho-toluene diamine (o-TDA).

Claim 15 (Original): The rigid polyurethane foam according to Claim 9, wherein the foam formulation comprises about 12.5%, based on the total foam formulation, of the 1,1,1,3,3-pentafluoropropane (HFC-245fa).

Claim 16 (Original): In a process of making an appliance insulation material, the improvement comprising including the rigid polyurethane foam according to Claim 9.

Claim 17 (Original): A rigid polyurethane foam prepared by mixing:

- an isocyanate;

- a polyol blend comprising

 - about 40% to about 90%, based on the total polyol blend, of an aromatic amine-initiated polyether polyol,

 - about 60% to about 10%, based on the total polyol blend, of an aromatic polyester polyol, and

 - wherein the sum of the percentages of the polyols totals 100%; and

- about 10 to about 15%, based on the total foam formulation, of 1,1,1,3,3-pentafluoropropane (HFC-245fa),

- optionally, one or more components chosen from catalysts, chain extenders, crosslinking agents, surfactants, foam stabilizers, cell regulators, fillers, dyes, pigments, flame retardants, hydrolysis protection agents, fungicides and bactericides,

wherein the rigid polyurethane foam has a k-factor at 35°F of from about 0.115 to about 0.120 BTU-in./hr.ft² °F.

Claim 18 (Original): The rigid polyurethane foam according to Claim 17, wherein the isocyanate is chosen from m-phenylene diisocyanate, p-phenylene diisocyanate, 2,4-toluene diisocyanate, 2,6-toluene diisocyanate, 1,6-hexamethylene diisocyanate, 1,4-hexamethylene diisocyanate, 1,4-cyclohexane diisocyanate, hexahydrotoluene diisocyanate and isomers thereof, 1,5-naphthylene diisocyanate, 1-methyl-phenyl-2,4-phenyl diisocyanate, 4,4'-diphenylmethane diisocyanate, 2,4'-diphenyl-methane diisocyanate, 4,4'-biphenylene diisocyanate, 3,3'-dimethoxy-4,4'-biphenylene diisocyanate, 3,3'-dimethyl-diphenyl-propane-4,4'-diisocyanate, 2,4,6-toluene triisocyanate, 4,4'-dimethyl-diphenyl-methane-2,2', 5,5'-tetraisocyanate and polymethylene polyphenylpolyisocyanates.

Claim 19 (Original): The rigid polyurethane foam according to Claim 17, wherein the isocyanate is a modified polymeric methylenediphenyl diisocyanate (pMDI).

Claim 20 (Original): The rigid polyurethane foam according to Claim 17, wherein the foam formulation further includes from about 0.1% to about 1.5%, based on the total foam formulation, of water.

Claim 21 (Original): The rigid polyurethane foam according to Claim 17, wherein the aromatic amine-initiated polyol is based on ortho-toluene diamine (o-TDA).

Claim 22 (Original): The rigid polyurethane foam according to Claim 17, wherein the polyol blend further includes up to about 20%, based on the total polyol blend, of a sucrose-based polyether polyol.

Claim 23 (Original): The rigid polyurethane foam according to Claim 17, wherein the foam formulation comprises about 12.5%, based on the total foam formulation, of the 1,1,1,3,3-pentafluoropropane (HFC-245fa).

Claim 24 (Original): In a process of making an appliance insulation material, the improvement comprising including the rigid polyurethane foam according to Claim 17.

Claim 25 (Original): A process for making a rigid polyurethane foam comprising mixing:

an isocyanate;

a polyol blend comprising

about 20% to about 100%, based on the total polyol blend, of an aromatic amine-initiated polyether polyol,

up to about 60%, based on the total polyol blend, of an aromatic polyester polyol, and

up to about 20%, based on the total polyol blend, of a sucrose-based polyether polyol,

wherein the sum of the percentages of the polyols totals 100%; and

about 10 to about 15%, based on the total foam formulation, of 1,1,1,3,3-pentafluoropropane (HFC-245fa),

optionally, one or more components chosen from chain extenders, crosslinking agents, surfactants, foam stabilizers, cell regulators, fillers, dyes, pigments, flame retardants, hydrolysis protection agents, fungicides and bactericides,

optionally in the presence of a catalyst,

wherein the rigid polyurethane foam has a k-factor at 35°F of from about 0.115 to about 0.120 BTU-in./hr.ft² °F.

Claim 26 (Original): The process according to Claim 25, wherein the polyol blend comprises about 55 % of the aromatic amine-initiated polyether polyol, about 25% of the aromatic polyester polyol and about 20% of the sucrose-based polyether polyol.

Claim 27 (Original): The process according to Claim 25, wherein the isocyanate is chosen from m-phenylene diisocyanate, p-phenylene diisocyanate, 2,4-toluene diisocyanate, 2,6-toluene diisocyanate, 1,6-hexamethylene diisocyanate, 1,4-hexamethylene diisocyanate, 1,4-cyclohexane diisocyanate, hexahydrotoluene diisocyanate and isomers thereof, 1,5-naphthylene diisocyanate, 1-methyl-phenyl-2,4-phenyl diisocyanate, 4,4'-diphenylmethane diisocyanate, 2,4'-diphenyl-methane diisocyanate, 4,4'-biphenylene diisocyanate, 3,3'-dimethoxy-4,4'-biphenylene

diisocyanate, 3,3'-dimethyl-diphenyl-propane-4,4'-diisocyanate, 2,4,6-toluene triisocyanate, 4,4'-dimethyl-diphenyl-methane-2,2', 5,5'-tetraisocyanate and polymethylene polyphenylpolyisocyanates.

Claim 28 (Original): The process according to Claim 25, wherein the isocyanate is a modified polymeric methylenediphenyl diisocyanate (pMDI).

Claim 29 (Original): The process according to Claim 25, wherein from about 0.1% to about 1.5%, based on the total foam formulation, of water is included.

Claim 30 (Original): The process according to Claim 25, wherein the aromatic amine-initiated polyol is based on ortho-toluene diamine (o-TDA).

Claim 31 (Original): The process according to Claim 25, wherein the foam formulation comprises about 12.5 %, based on the total foam formulation, of the 1,1,1,3,3-pentafluoropropane (HFC-245fa).

Claim 32 (Original): In a process of making an appliance insulation material, the improvement comprising including the rigid polyurethane foam made by the process according to Claim 25.

Claim 33 (Previously presented): A process for making a rigid polyurethane foam comprising mixing:

- an isocyanate;

- a polyol blend comprising

- about 20% to about 90%, based on the total polyol blend, of an aromatic amine-initiated polyether polyol,

- about 5% to about 60%, based on the total polyol blend, of an aromatic polyester polyol, and

- about 5% to about 20%, based on the total polyol blend, of a sucrose-based polyether polyol,

- wherein the sum of the percentages of the polyols totals 100%; and

about 10 to about 15%, based on the total foam formulation, of 1,1,1,3,3-pentafluoropropane (HFC-245fa),
optionally, one or more components chosen from chain extenders,
crosslinking agents, surfactants, foam stabilizers, cell regulators, fillers,
dyes, pigments, flame retardants, hydrolysis protection agents,
fungicides and bactericides,
optionally in the presence of a catalyst,
wherein the rigid polyurethane foam has a k-factor at 35°F of from about 0.115 to about 0.120 BTU-in./hr.ft² °F.

Claim 34 (Original): The process according to Claim 33, wherein the polyol blend comprises about 55% of the aromatic amine-initiated polyether polyol, about 25% of the aromatic polyester polyol and about 20% of the sucrose-based polyether polyol.

Claim 35 (Original): The process according to Claim 33, wherein the isocyanate is chosen from m-phenylene diisocyanate, p-phenylene diisocyanate, 2,4-toluene diisocyanate, 2,6-toluene diisocyanate, 1,6-hexamethylene diisocyanate, 1,4-hexamethylene diisocyanate, 1,4-cyclohexane diisocyanate, hexahydrotoluene diisocyanate and isomers thereof, 1,5-naphthylene diisocyanate, 1-methyl-phenyl-2,4-phenyl diisocyanate, 4,4'-diphenylmethane diisocyanate, 2,4'-diphenyl-methane diisocyanate, 4,4'-biphenylene diisocyanate, 3,3'-dimethoxy-4,4'-biphenylene diisocyanate, 3,3'-dimethyl-diphenyl-propane-4,4'-diisocyanate, 2,4,6-toluene triisocyanate, 4,4'-dimethyl-diphenyl-methane-2,2', 5,5'-tetraisocyanate and polymethylene polyphenylpolyisocyanates.

Claim 36 (Original): The process according to Claim 33, wherein the isocyanate is a modified polymeric methylenediphenyl diisocyanate (pMDI).

Claim 37 (Original): The process according to Claim 33, wherein from about 0.1% to about 1.5%, based on the total foam formulation, of water is included.

Claim 38 (Original): The process according to Claim 33, wherein the aromatic amine-initiated polyol is based on ortho-toluene diamine (o-TDA).

Claim 39 (Original): The process according to Claim 33, wherein the foam formulation comprises about 12.5%, based on the total foam formulation, of the 1,1,1,3,3-pentafluoropropane (HFC-245fa).

Claim 40 (Original): In a process of making an appliance insulation material, the improvement comprising including the rigid polyurethane foam made by the process according to Claim 33.

Claim 41 (Original): A process for making a rigid polyurethane foam comprising mixing:

- an isocyanate;

- a polyol blend comprising

 - about 40% to about 90%, based on the total foam formulation, of an aromatic amine-initiated polyether polyol,

 - about 60% to about 10%, based on the total foam formulation, of an aromatic polyester polyol, and

 - wherein the sum of the percentages of the polyols totals 100%; and

- about 10 to about 15%, based on the total foam formulation, of 1,1,1,3,3-pentafluoropropane (HFC-245fa),

- optionally, one or more components chosen from catalysts, chain extenders, crosslinking agents, surfactants, foam stabilizers, cell regulators, fillers, dyes, pigments, flame retardants, hydrolysis protection agents, fungicides and bactericides,

wherein the rigid polyurethane foam has a k-factor at 35°F of from about 0.115 to about 0.120 BTU-in./hr.ft² °F.

Claim 42 (Original): The process according to Claim 41, wherein the isocyanate is chosen from m-phenylene diisocyanate, p-phenylene diisocyanate, 2,4-toluene diisocyanate, 2,6-toluene diisocyanate, 1,6-hexamethylene diisocyanate, 1,4-

hexamethylene diisocyanate, 1,4-cyclohexane diisocyanate, hexahydrotoluene diisocyanate and isomers thereof, 1,5-naphthylene diisocyanate, 1-methyl-phenyl-2,4-phenyl diisocyanate, 4,4'-diphenylmethane diisocyanate, 2,4'-diphenyl-methane diisocyanate, 4,4'-biphenylene diisocyanate, 3,3'-dimethoxy-4,4'-biphenylene diisocyanate, 3,3'-dimethyl-diphenyl-propane-4,4'-diisocyanate, 2,4,6-toluene triisocyanate, 4,4'-dimethyl-diphenyl-methane-2,2', 5,5'-tetraisocyanate and polymethylene polyphenylpolyisocyanates.

Claim 43 (Original): The process according to Claim 41, wherein the isocyanate is a modified polymeric methylenediphenyl diisocyanate (pMDI).

Claim 44 (Original): The process according to Claim 41, wherein from about 0.1% to about 1.5%, based on the total foam formulation, of water is included.

Claim 45 (Original): The process according to Claim 41, wherein the aromatic amine-initiated polyol is based on ortho-toluene diamine (o-TDA).

Claim 46 (Original): The process according to Claim 41, wherein the foam formulation comprises about 12.5%, based on the total foam formulation, of the 1,1,1,3,3-pentafluoropropane (HFC-245fa).

Claim 47 (Original): The process according to Claim 41, wherein the polyol blend further includes up to about 20%, based on the total foam formulation, of a sucrose-based polyether polyol.

Claim 48 (Original): In a process of making an appliance insulation material, the improvement comprising including the rigid polyurethane foam made by the process according to Claim 41.